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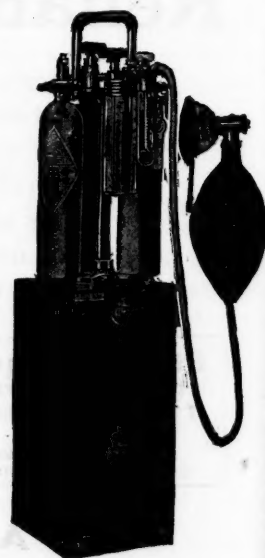
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ORIGINAL ARTICLES

DIET IN THE TREATMENT OF DIARRHOEA IN INFANCY*.

BY DR. WM. P. BUFFUM, JR.
PROVIDENCE, R. I.

This brief paper deals with diet in *acute* diarrhoea in infancy. The looseness of the bowels associated with the more chronic conditions due to the improper digestion and absorption of certain food elements will not be considered here. Diarrhoea also occurs in association with parenteral infections such as tonsillitis. This may develop into a condition which requires special treatment but it is usually very transient.

The acute diarrhoea can be divided into *two* types or *classes*, for the sake of convenience in discussion. One type, which is not very common in Providence for the last few years, is the real old-fashioned ileocolitis. The chief pathology is an *invasion of the intestinal mucous membranes* by microorganisms causing intense inflammation and superficial ulceration. It is characterized clinically by a temperature which remains elevated in spite of appropriate treatment, and usually by some blood in the stools.

The other type of diarrhoea may be called the *usual type*. Under this heading come the *mild upsets and indigestions* which occur chiefly in summer, and also the severe and sometimes fatal *gastrointestinal intoxications*. Many causes are given for these conditions, including excessive or sustained heat, chilling, improper feeding, improperly kept milk, and infection from feces by lack of sufficient care and sanitation. There is considerable evidence that the *chief cause of diarrhoea is contamination by fingers, food, flies and so forth, which causes bacteria from the feces to enter the mouth*. At any rate, after the condition is started, the morbid process consists in the action of microorganisms on the *intestinal contents* producing in

the intestinal contents irritating and toxic substances which by their action stimulate the intestine to overaction.

I do not mean to give the impression that these two types of diarrhoea are definite, and that any case can be readily placed in one class or the other. It is frequently exceedingly difficult to state whether in a given case the infection is a true ileocolitis with an infection of the intestinal wall by one of the dysentery organisms, or whether the infection is of the usual type and is confined to the intestinal contents. There may be a large number of cases all obviously similar occurring at the same time which are difficult to classify and not uncommonly the two types occur together, an *ileocolitis* infection taking place during the course of a *simple* diarrhoea, nevertheless for the sake of discussion, it seems to me to be better to consider the two types as definitely established.

About the *diet* in the first type, ileocolitis, I have little to say except to state the old text-book principles. Unless the case is of considerable duration with marked exhaustion, the *initial catharsis* and *24 hours on barley water* is indicated. I believe that an *ounce of sugar* in a quart of barley water does no harm and is of considerable advantage in furnishing some nourishment and in making the food more palatable. After the first 24 hours, if there is no vomiting, the food should be gradually increased. It is impossible to determine from *personal experience* what is the best form of feeding, as the cases have a distinct tendency to run their course severe or mild, according to the nature of the infection, etc., without reference to the diet. It is generally believed that it is best to *avoid sweet milk* and that *skimmed lactic acid milk or protein milk* forms the basis of the best diet. This should be given well diluted and in small quantities at first and with it *plenty of cane sugar or malt sugar or glucose*. Some have found the *powdered milks*, which contain a *low fat*, such as malted milk or a skimmed milk powder, satisfactory. Especially in small babies, the *ability to handle fat* is very poor during and for some weeks or months after this attack. There is reported by several competent observers an ileocolitis caused by a *gas producing bacillus* in the

*Read before the Rhode Island Medical Society, March 1, 1923.

treatment of which *lactic acid milk* acts as a specific.

The diarrhoeas which are not included in the term ileocolitis and which I have grouped together as *the usual type*, vary considerably in their nature and severity. A common and mild form is seen in which the baby has from two to ten loose stools daily which are bright yellow or light green, often, strongly acid in reaction with the sour milk odor and containing more or less mucus, and in which the constitutional symptoms are slight. All degrees of severity are seen, including the so-called *intoxication cases*, where through loss of fluid and malnutrition, extreme *dehydration* and *acidosis* develop and death rapidly follows.

In a simple case, as I have said, the pathological process seems to be the action of bacteria on the intestinal contents, causing the formation of irritating and toxic substances. It is impossible at present to say what these organisms are and where they come from. The intestinal flora are so abundant and diverse that no one has been able to identify the offending organism. It has been assumed that the disease is spread in much the same manner as typhoid fever, by direct contagion and by general lack of sanitation in connection with existing cases and carriers. It has also been assumed that under certain circumstances, where the baby is in poor condition, due to heat, indigestion and so forth, that bacteria usually harmless and normally inhabiting the intestinal tract may cause intestinal disease.

The *irritating substance* produced by these bacteria seems to usually consist of the *lower and simple fatty acids* which are formed from both the fat and the sugar of the milk. The connection between the diarrhoea and the presence of these fatty acids is pretty definite, especially in the cases where the stools are strongly acid.

The indications for treatment are to *clear out* the existing irritating substances, to furnish a food *least favorable to the formation of these fatty acids*, and to make the intestinal contents as antagonistic as possible to the *growth of these organisms*. The initial dose of castor oil and 12 to 24 hours starvation is indicated unless the patient is already exhausted by a protracted disease. *Sweet milk* is contraindicated unless the disease is extremely mild. The logical diet is one high in *protein* and low in *fat and sugar*. This not only fur-

nishes a poor medium for the development of fatty acids, but the breaking down of the protein produces alkaline substances which inhibit the growth of acid producing organisms. This type of diet, high in protein and low in fat and sugar, is best furnished to a bottle baby by *protein milk*. Protein milk consists of one pint of butter milk, one pint of water and the curd from one quart of sweet milk. Protein milk may be given straight or diluted with water. This treatment works like a charm in many cases and in the greater number of cases seems to be the best diet. It is most sure to work well where the stools are strongly acid with a rancid fat odor. In some cases and some groups of cases protein milk does not work well and while on this diet the temperature has a tendency to be raised, the stools remain loose and the general condition of the patient does not improve. In the summer of 1920, the diarrhoea prevalent here was of a definite type, the temperature was apt to be raised for several days, the stools were profuse, watery in consistency, nearly colorless, and the prostration was great. In this group of cases protein milk did not act favorably. Protein milk is also likely to be unsatisfactory in young babies *under 3 months of age* and in *feeble or exhausted babies*. Apparently the *low sugar* in this diet by depriving the patient of the form of nourishment most easily and rapidly assimilated acts unfavorably in these cases, causing weakness and collapse. *Protein milk alone* should be given only while the baby is under observation, and either sugar or starchy food should be added or the diet changed entirely as soon as possible.

Another form of treatment is to make a diet composed only of some form of *sugar and flour* without any milk. A form in which I have used this has consisted of an ounce of cane sugar, an ounce of one of the maltose and dextrine preparations and one-half ounce of barley flour to the quart of water. A mixture such as this, although not sufficient to supply the *nutrition needed*, is satisfactory for a few days, as the *caloric value* is considerable and in an *easily available form*. This kind of diet is very useful as a temporary expedient in feeble babies and in other cases where protein milk does not work well, where it is not available, or where the case is not of sufficient severity to make the labor of making protein milk necessary. Why does such a diet as this work? Ap-

parently from the intestinal contents produced by a carbohydrate diet, the bacteria are usually *unable to produce the toxic substances* which are formed from a milk diet. After having the baby on such a diet, some form of milk is added in small quantities. Usually, I believe, if the case is of any great severity, *fat free lactic acid milk* can be taken best at this time.

If the diarrhoea is of a severe type, and especially if it is allowed to go on for several days before the diet is changed, the severe so-called *intoxication symptoms develop*. The temperature is likely to be about 104° , the surface of the body becomes cold and pale, the eyes sunken and the whole appearance is that of a very sick baby. In the last stages the breathing becomes both deep and rapid, indicating the presence of acidosis, and if this stage is allowed to continue for several hours death ensues. The process which has taken place seems to be chiefly one of *dehydration*. The loss of fluid from diarrhoea, vomiting, natural evaporation increased by fever, and failure to take in sufficient fluid has depleted the body. This finally results in a diminution of the *blood volume* with a *concentration* of the blood, a decrease in the circulation and a failure of the *kidney* to secrete. Apparently the *acidosis* is due chiefly to the failure of the kidneys to *eliminate acid substances*.

The chief indication for treatment in this condition is therefore to get water into the baby's body and especially into his blood stream. To *check the vomiting* the frequent administration of a small amount of a weak solution of sodium bicarbonate and water is generally the most valuable remedy. This washes out the stomach and is generally retained later. If this fails it is best to give nothing by mouth for several hours. Considerable fluid can be given by *rectal irrigation*. This method is especially valuable when the child is not very sick and when it is thus not so important to be sure that the fluid is retained. If the case is at all urgent, the fluid must be injected *under the skin* or *into the peritoneal cavity* and probably the former is the best method. Even in a little baby a *pint of fluid* should be injected in the first 24 hours. *Ringers' solution* is said to be slightly better than saline, although the latter is generally used. In the most urgent condition of dehydration acidosis, in addition to the above measures, a rapid effect can be

obtained by the injection of a *10% solution of glucose intravenously*. This glucose, by osmotic pressure, draws the fluid into the blood stream, thus increasing the *volume of blood* and the *circulation*. Alkalies have been given in these cases ever since it was discovered that an acidosis was present, but the effects seems to be very slight.

In conclusion, I should say that the two most important points to bear in mind in treating diarrhoea in bottle-fed babies are first to stop giving milk immediately, until it is evident that it is safe to give it, and, secondly, to always guard against dehydration.

Discussion.

Dr. Calder: I have little more to say. In discussing the other papers that followed mine, I simply want to emphasize that there are principles underlying successful feeding of babies. I think the secret of successful infant feeding in a case of diarrhoea, or any of the infant diseases, is the making of a correct diagnosis. It sounds a light sort of thing, and yet I see a great many men trying to feed babies in the wrong way, when, knowing what the trouble really is, it becomes a fairly simple matter from the portion of foods at our disposal to pick one out and remedy our trouble.

Dr. Robert M. Lord: It seems to me that it is rather an imposition on the other members of the Society to listen to me discuss the subject in hand, as I have had so little experience in private practice in that respect. The practice in hospital feeding is rather a different proposition, as you all know. You can let a baby that has cramps in the hospital cry all day, and it wouldn't matter, but you can't do that in private practice. Nevertheless, I would like to add my ideas on infant feeding. I believe that any intelligent and well trained physician can pretty well feed a normal infant, master any one of the methods of feeding and stick to it. Doctors Calder and Utter have given such a clear view on their methods of feeding infants that there is little more for me to say about it. There will always be a few babies who require the attention of a pediatrician and therefore require a more complicated feeding regime. But these cases are not the ordinary run of babies.

PROBLEMS OF PRESENT DAY UNREST.*

BY EDMUND B. DELABARRE.

Professor of Psychology, Brown University

The topic for discussion this afternoon was announced, as "Persisting Psychological Effects of the World War," and was intended to deal especially with what we commonly refer to under the vague and comprehensive term "unrest." As I have reflected upon the question, it has assumed a somewhat broader form in my mind, involving a consideration not only of the nature of this unrest, but also of some of its particular causes and possible methods of cure; and not only of the psychological factors that belong to it, but also of others with which these are inextricably intermingled. As thus formulated, the field of inquiry is much too broad for comprehensive treatment in a single brief talk, and I shall touch upon only a few features of it that have emphasized themselves in my own mind, leaving it understood that numerous other considerations of equal importance must be left without mention.

Of the causes responsible for the world unrest of today and determining its nature, I wish to speak of three only—one of them largely economic, one intellectual, and the third biological and social, each of them being at the same time largely but not exclusively psychological. Of economic conditions we need not speak at length. They are very influential, but also very well known. The war was responsible for the introduction of great economic extremes and disorganization. On the one hand, it brought a tremendous amount of economic distress, arousing bitter conflicts of opinion as to how to remedy existing evils and calling for unusual efforts of charity, which may temporarily alleviate suffering, but which does not remove and may aggravate underlying causes. The healing of this appalling distress is a problem of immense difficulty that will demand a long time for its solution. In the meantime, the condition is so acute and of such magnitude as to induce much of the despair that makes effort seem useless, and so is responsible for a great deal of inactivity and unrest. On the other hand, the war led in other cases to a wide-spread increase of prosperity. High wages and large profits brought a great amount of financial ease. This condition also is one that tends to discourage effort, and to lead to an unhealthy, restless, easy-going attitude. With few exceptions, man is as lazy as circumstances permit. Necessity has been his spur to

effort and progress. When blessed—or cursed—with easily garnered abundance, he may be active enough when he feels like it, but, for the most part, he does not work. Necessary but disagreeable tasks are avoided, amusement and not productive effort is the usual goal of activity; or, when work must be done, soft jobs yielding large and quick returns under easy conditions are demanded, the delicate adjustment of the economic mechanism on which the prosperous civilization depends becomes badly deranged, economic unsoundness and instability inevitably result. Even those who neither suffer nor prosper abnormally catch the infection of these disorders, and help to accentuate the trouble. Further complications arise from numerous other factors to which we can barely allude, such as demand for higher standards of comfort, diminution of purchasing power through high prices, burdensome taxation and other causes, disturbance of the normal flow of commodities, irregularity in the supply of materials and labor necessary for the smooth conduct of the delicate complexities of industry and commerce. With all this, there is a natural reaction from the strain of effort, of anxiety and excitement of war-time, a general relaxation that is profound and prolonged in proportion to the preceding strain, which leads to relative cessation of struggle and effort, and of serious facing of duties and problems. So we have mingled together as characteristic parts of the nature of the unrest that we are considering, a vast economic disorganization; a warfare of opinion, a lack of clear vision, and a working along conflicting lines among those seriously concerned with remedying it; and a very great deal of indifferent or helpless inactivity.

The second group of causes that have led to present conditions, I have called predominantly intellectual. The world, on the whole, has grown too intelligent to accept many old ideas, even such as have seemed to be necessary foundations on which the social and moral order rests; but it has not, on the whole, become intelligent enough to see clearly on what new ideas our future intellectual, social and moral sanity can be securely founded. There has been an unprecedentedly rapid increase in exact knowledge, but very inadequate coordination of it and adjustment to it. We are in a time of transition between a fairly well understood, though imperfect, old conception of the universe, and a not yet attained, but fuller and better new conception. Such periods are inevitable, and this one would have come without the war, though it has perhaps been accelerated and

* Abstract of a talk before the Rhode Island Medico-Legal Society, January 25, 1923.

intensified by the war. It is a necessary stage in progress, for progress of every kind demands that advance be not continuous, but consist of periods of evident growth, alternating with periods of apparent stagnation. These latter, however, are not times of real halting, as they seem. They are like the stages in the advance of an army, when it must consolidate its position after moving forward. What has been won and accumulated must be organized, digested, harmonized, adjusted, fully comprehended, unified as a foundation for new advance. Such times of transition are, therefore, times of progress too, though no new ground is gained; but they are also necessarily times of confusion, uncertainty, mal-adjustment, disharmony, unrest. They involve a breaking away from old ideas and conventions, with nothing sure and widely acceptable to take their place. There results a great variety of confused opinions and attitudes, each appealing temporarily to limited groups. On some, the effect is to paralyze thought and effort: the problems are too difficult for them, or no concern of theirs; they make no serious attempt to understand or solve them, they readily disregard the undermined old standards, and with nothing in their place, become frivolous, uncritical, unconventional, thoughtless, indifferent, careless and care-free. Great numbers of others, more serious in their attitude, but incapable of clear thought and broad vision, are open to the lure of the most visionary theories. Many people of the highest intelligence belong to this class, and therein lies its great danger; for there are but very few who in all these complexities can think widely and deeply and truly. At the best, none of us have time and energy to arrive at sound first-hand conclusions on more than a very few subjects. The majority of opinions are based upon early instruction, emotional appeal, suggestion, incomplete information, statements of others who are trusted as authorities; and it is easy to choose authorities unwisely, and to be misguided without being unintelligent. Consequently, mistaken and half-true ideas flourish. Noble ideals are fought for, more often by the impractical and harmful method of destroying the old, and trying to magically will the new into existence, rarely by the only workable method of comprehending the mechanism, the slow steps and influences, which alone can bring them into existence, and thus gradually and laboriously effecting their sure evolution. Quackery and charlatany abound in thought and practice. The get-rich-quick type of idea prevails widely—the idea of becoming rich or well or good, or of making the world well ordered and peaceful, by magic and wish and luck, with a minimum of effort, instead of by the slow and difficult method of understand-

ing, and using causally working mechanisms and evolutionary processes.

Two typical, but mistaken, attitudes, differing from the shallow and careless, and from the serious but misguided, just described, deserve especial emphasis. A prominent feature of the recent enormous growth in exact knowledge has been that it involves a great extension of the deterministic conception of the universe. Determinism is the belief that all the phenomena of the universe, physical and mental, occur in obedience to invariable, unbroken and unbreakable laws of causality. The universe is a mechanism, no powers, spiritual, mental or vital, exist that interrupt its rigidly determined flow. Life and thought, feeling and human action, are as much subject to this mechanistic determination as are the processes of inorganic nature. There is a difference only of complexity, never in essential nature, in the causal laws that work without exception in all these cases. Everyone knows that this idea is gaining wide acceptance and increasing strength. To the great majority, even of intelligent people, its acceptance seems incompatible with a belief in anything truly spiritual or moral. As a consequence, there are two most common attitudes toward it, both of them natural, but both mistaken. The one clings with devotion to a belief in spiritual and moral truths, and thinks that to retain them we must oppose the new conceptions, must fight against the belief in evolution, the mechanistic doctrine of life and the deterministic views of psychology. The other claims, quite as indefensibly, that the newer conceptions are true, but that to hold them, we must give up the outworn beliefs in God, in freedom, in duty, in morality. The true belief that reconciles and takes the place of these two opposing ones, will receive discussion among our final conclusions.

The third set of causes for present unrest I characterized as largely biological and social. I allude to considerations that are set forth in detail in such books as Lothrop Stoddard's *Revolt Against Civilization* and similar discussions. Stoddard tells us that civilization is both a recent and a fragile thing. The burden of its support is borne by a very small number of superior men. Civilizations of the past have vanished, not because of any inherent law of unescapable decay, but because they have permitted their superior stocks to deteriorate. Ours, too, will perish, unless we can learn how to offset this tendency and take effective action to apply the knowledge. The Army Intelligence Tests were applied to nearly two million Americans during the war. While not perfect, they have a high degree of reliability, and are to a considerable degree indicative of the

distribution of intelligence in the country as a whole. The results have been announced in many different, including some misleading, ways. The ordinary way of stating them is to say that they reveal about thirteen per cent. of men of A and B grade, defined as of superior intelligence, about sixty per cent. of C grade, defined as average, and about twenty-five per cent. of lesser grades, defined as inferior. The latest authoritative statement has been made by Robert M. Yerkes, in the *Atlantic Monthly* for March, 1923. In terms of the "combined scale" of intelligence, ranging from zero to twenty-six points, of the men of the white draft, about twelve per cent. fell within the highest third; about nineteen per cent. in the highest two-fifths, and sixty-two per cent. in the middle fifth. In this group, at least, the really superior are relatively few. Other studies have proven that the relative number of superiors tends to diminish because of lower birth-rates, and of inferiors to increase. For example, it is estimated that whereas 1,000 college graduates of today will have but fifty descendants 200 years hence, the same number of Rumanians now in Boston will have 100,000 descendants at that time. Moreover, recruitment from middle and lower to superior classes constantly diminishes. Still other studies have proven that the type of superiority in question is wholly a matter of evolution and inheritance. Favorable environment and institutions, education and opportunity, do not affect it as an inherent quality. These are good in themselves, determining how far the individual develops the capacities that he inherits; but civilization cannot be saved by them, but only by counteracting the tendency to an ever growing diminution in the relative proportion of those superiors by inheritance, who are its only possible builders and preservers. With the fast increasing complexity and burden of political, social, scientific and commercial systems demanding constantly higher abilities and more numerous men of the highest type, and the supply of these threatening to become insufficient, with the middle intellectual classes able only to follow under right guidance, but not to lead, and with the more prolific inferiors actively rebelling against the institutions of civilization which they cannot understand, and from which they cannot profit, we naturally suffer from an unrest that can never cure itself unless it can solve this prob-

lem of maintaining a sufficient supply of superior individuals and of control over the inferiors.

There are abundant causes for the serious conditions of unrest that we are considering, including many others besides those that have been mentioned. Can we see any definite hope of effective remedies? Of course, we may take an optimistic attitude, and have faith that the race will solve its problems successfully, and will continue to progress in spite of difficulties. But we should remember that an optimism that sits idle, letting things take their course, is evil and unwarranted. The only optimism that is healthy and justified is the kind that says that things will turn out right only if we devote our best thought and efforts to making it do so. This kind helpfully encourages us, but does not itself show us just how to go to work. We still need suggestions about that. Here again the field is large, and I can mention only a few considerations. How the economic difficulties are to be met, I am not equipped to say, and can only fall back personally on the belief that if other conditions can be dealt with successfully, these economic troubles will find their solution. Among the many definite hopeful methods in sight of solving our problem, I shall mention only three. The first remedy that I suggest is the one developed at length in Stoddard's book. To insure the continuance of a safe and sufficient proportion of superior men to guide and preserve our civilization, we must apply the methods of eugenics—the science of controlling human heredity along desirable lines. This science has learned much, and will learn more, about the exact laws of heredity. On their basis, it is ready with numerous suggestions for the betterment of the quality of the race. The methods are sure, practical, human. If we can make up our minds to apply them, they will solve this most fundamental and urgent of our problems. If we lack the intelligence or the courage to do this, our civilization is in grave danger of an irrevocable deterioration. What the methods are in detail we have not time to specify, but they can easily be learned by a reading of Stoddard, and of books on eugenics. We have much of the necessary knowledge, and the choice of applying it or not. It is a question of which we are going to do.

My second remedial suggestion is this: We who have the clear insight, must strive to make clear

to all that there is no genuine antagonism between religion and science, between freedom and determinism, between spiritual values and mechanistic methods, between idealism and enlightened common sense. Neither need sacrifice any of its essential beliefs, but only its denial of the equal validity of the other. An idealism that floats in the clouds, and a materialism that sees only the ground, are equally blind and impractical. If we can but realize that spirit must and does work only through mechanism, because it is orderly and consistent, and that mechanism is never soulless, but always the voice and method and sole revelation of spirit, there is no antagonism. Determinism and mechanism do not imply blind, lifeless powers, nor does scientific description of phenomena and processes imply materialism. This is absolutely true, but is exceedingly difficult to realize. Equally, idealism and spirituality do not rightly imply magic and miracle, thin ghostliness and indeterminism. If we could seek for evidence of the divine and spiritual, not in miracle, not in signs and wonders, but in regularity and order and consistency, we would have a surer and saner foundation for both our religious and our scientific faith. The idealism that joins hands harmoniously with science, and the science that allies itself consistently with idealism, hold that the world is truly One Spirit, eternal, purposeful, perfect in its real nature, but manifesting itself fragmentarily to observation as a causally determined series of mental and physical phenomena. The business of science is to describe the phenomenal appearances and their unbroken causal workings; of philosophy, to interpret them as manifestations of spiritual meanings and purpose and working power. This is God's world; but God works materially only in the form of physical causes, in our finite minds only in the form of deterministic mental law which runs parallel with the physical happenings. As we all share in His being, so we share in His spirituality and freedom; but, like Him as a whole, we express our nature phenomenally only in the form of activities that are to be scientifically described as having only mechanistic physical and mental causes. The only miracle is the miracle of complete orderliness, which divinely appoints deterministic causation as the only agent in the execution of its purposes, and divinely establishes every act of free finite purpose in its fitting place as a mem-

ber of the causal sequence. It is the definiteness and consistency of God's nature and of our own truest character that expresses itself in these rigid laws. They are not dead materialistic powers that bind us and Him; but laws that He and we, in harmonious union and in the deepest sense, make use of to manifest our spiritual nature in consistent and appropriate phenomenal form. So long as we hold to the conception that the finite flow is according to regular and invariable principles, physical science may describe these as causal mechanism, biology and psychology may substitute the idea of a gradual unfolding or exfoliation, or manifestation in appropriate successive stages of organic growth and evolution, and religion may insist that they are the finite embodiment of eternal divine purposes, all with equal truth and mutual consistency. In his groping toward truth, man has unfortunately, yet inevitably, based his spiritual or religious beliefs on an indeterministic foundation. If that alliance is held, religion must eventually disappear. It is continually forced to compromise, struggling against the advance of science, but yielding step by step, yesterday to Copernicanism, today to evolution, tomorrow to complete determinism. But a religion that accepts unbroken determinism as the finite expression of its eternal truths, has no need to compromise or yield. It regains its entire kingdom. It believes in nothing that acts in the finite world contrary and superior to the scientifically expressed laws of nature; but it interprets the truth and source of these in spiritual terms. Freedom and responsibility do not rest on freedom from law and consistency. True freedom means only freedom to use law as a conscious part of unbroken universal mechanistic law, in order to attain our purposes. That freedom, within the limits that experience reveals as practical, determinism, and determinism alone assures us. This consistent and well founded union of idealism and science leaves us with many difficult problems. But they are far less serious and difficult than the problems that belong either to an idealism or to a science, each of which holds itself the only truth and opposes the other. It has the further advantage that it envisages a world that, so far as our finite minds can grasp it, is harmonious, consistent, unified, and not disjointed and chaotic—a world eternally spiritual in its being and purpose, causally mental and material in its finite appearance and unfolding.

My third and final suggestion is one not for immediate adoption, but rather strongly indicated as a desirable possibility for the future. Psychology has developed methods of determining the innate intelligence of individuals. No one claims that these tests are perfect and infallible. But they have a high degree of reliability already, are in use for many important practical purposes, and are sure to receive further development and perfecting. We have not as yet any correspondingly reliable tests of moral qualities and of character, though a beginning has been made toward devising them. It is a more difficult task, but nevertheless one that will some day be solved. Let us suppose that the time will come when we can, by such tests, confidently determine, not only the intelligence of an individual, but also his honesty, his courage, his initiative, his loyalty, his selfishness or generosity, his openness to appeals for action that is for the interest of his group, rather than that of himself, his degree of energy, and whether it expends itself on trivial and personal aims, or is more readily devoted to remoter, wider, more important ends. Such tests, once made truly reliable, would be of immeasurable service in the most varied ways. One of their applications would almost surely be the development of a new and better type of democracy, one that while insuring so far as possible equality of justice and of opportunity, would recognize the unescapable inequality of capacity and of fitness for different activities. We need only to have some dependable way of measuring intelligence and character, in order to say that no one below a certain standard in these qualities shall be allowed to vote; that those above this standard, but below a certain second higher standard, may vote, but not hold office; and that those exceeding the higher standard may vote and hold office. Inasmuch as offices are of many degrees of difficulty, the standards of intelligence and loyalty demanded for each could be effectively graded. I look with confidence to the coming of a time when these things can be done; and I have confidence that when we possess sure tests of the fitness of individuals to hold office and to vote, the people will see to it that only the fit shall exercise these functions. It may be that we need not even wait for character tests to be developed, for already the intelligence tests alone show a high degree of correlation with traits of character, and would thus suffice for a good beginning. On the

whole, persons of high intelligence are very apt to be persons of high character also. Even in the exceptional cases, it may be that Frazer is right in claiming that "more mischief has probably been wrought in the world by honest fools in high places than by intelligent rascals." There is no need to dwell upon the manifest superiority of a system of government so organized, and there is every reason why we should hope that its adoption may not be long delayed.*

We have traced some, but only a few, of the important causes that have led to the unrest and instability of the present. We have suggested some, but only a few, of the directions in which we may hopefully look for influences that can remedy it. The condition is not one that can cure itself without the best efforts of all of us. We must work hard for the gaining of knowledge, for the spread of sound doctrine, for the suppression of destructive ideas and forces. In many cases also, we shall need not only knowledge and work, but the courage to break away from old conventions and prejudices, and to adopt and enforce the new effective methods that scientific study has taught us.

*These suggestions are not without vigorous support from other writers. Since this talk was given, a number of instances have come to my notice. For example, James G. Fraser (Golden Bough, Abridged Edition, p. 47) says: "Everything that helps to raise society by opening a career to talent and proportioning the degrees of authority to men's natural abilities, deserves to be welcomed by all who have the real good of their fellows at heart." Hudson Maxim (quoted in *Literary Digest*, March 17, 1923, p. 28) remarks: "The greatest invention yet to be made is the one that will be of the greatest service. It is a method of government whereby the common people may be self-governing, and at the same time be prevented from committing political and social suicide through the enfranchised ignorance and avarice." Frank Exline, in his recently published book entitled "Politics," advocates the use of mental tests for the scientific classification of all citizens according to their ability and education, and on their basis determining the part that each may take in governing and administering the State. He would deprive the incompetent of the franchise, and exclude them from office by such means; and he claims: "The people themselves desire neither democracy nor popular sovereignty; they desire efficient, wise and just government, and they would welcome the inauguration of any practical method by which the efficient, wise or just men of the State could be discovered and installed in the office of government."

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IN SOLEMN REVERENCE TO

THE MEMORY OF

Warren G. Harding

PRESIDENT OF THE UNITED STATES

WHO DIED AUGUST 2, 1923

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THE RHODE ISLAND MEDICAL JOURNAL

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EDITORIALS

THE VALUE OF NEW METHODS.

It is not the purpose here to discredit in any way the new methods of diagnosis and treatment, but a word of caution may not be amiss in accepting all that is new because it is new.

After centuries of groping about and stumbling slowly forward, physicians have begun to see real improvement in the diagnosis, prevention and cure of disease. The period of empiricism is passing and today we are beginning to scientifically measure and check up our diagnosis and treatment.

The value of the bacteriological and pathological laboratory examination is indispensable in making correct diagnosis and prognosis, yet these two agents for good sometimes do harm as well, for wrong interpretations are placed by physicians upon laboratory reports. Laboratory reports are put out for just what they are. They do not pretend at diagnosis, for it is distinctly up to the physician to correlate clinical and laboratory findings.

When a culture is sent to the laboratory for examination for diphtheria bacilli the bacteriologist simply reports his findings. If it is positive the doctor must make up his mind whether the patient has diphtheria or not. If he has a sore throat it is

quite likely that he is suffering from diphtheria but he may have scarlet fever and be a diphtheria carrier. On the other hand, if the report comes back negative, the patient may still have diphtheria and if later the patient dies of the disease and the doctor attempts to protect himself by saying that the culture was negative he is putting up a poor defense and one which would not morally exonerate him. Another patient goes to the physician with vague and indefinite symptoms and the doctor as a last resort has a Wassermann test made to find that it is positive and therefore the man must suffer from syphilis. A man falls on the street, breaks his leg and is hurried to the hospital, when, among other examinations, a Wassermann is done. Whether positive or negative has nothing to do with the diagnosis of a fractured tibia. No more may a man's symptoms be due to syphilis simply because he has a positive Wassermann. The laboratory, biological, chemical, bacteriological, pathological and X-ray departments are intended only to furnish certain facts to the physician to enable him to make a correct diagnosis.

It is natural to fly to new things, but physicians should be slow to accept as truths things which have not stood the test of experience in other hands than the discoverer's. Physicians should not get away from the clinical side of the disease and its manifestations. The more he sees, if he observes correctly, the keener will be his judgment even when aided only by the history and what he sees, feels and hears. The laboratory is the hand maiden of the physician but not his superior.

In treatment many new scientific ideas are being advanced and seemingly supported by proof but it pays to wait to see what other investigators find. Any physician who accepts ill supported methods of treatment may make money while the boom lasts but the public will not have the same confidence in him again if it proves to be a failure. One or two reputable physicians in Boston have recently passed through this experience and other physicians can no longer place any confidence in them.

WAGES AND FEES.

Some while ago there appeared in one of our daily papers a letter, the gist of which was a complaining query as to when the doctor's fees were to

be reduced. The three dollar house fee and the two dollar office fee "for a few minutes work (?) " were frowned upon as being a sort of a piracy that preyed upon the misfortune and tribulations of the people.

The period was recalled of the good old days when physicians in even urban practice were not only pleased but grateful for the two dollar fee that the patient graciously handed him (if at all) any time subsequent to the treatment rendered, from two weeks to two years. The thought conveyed was that he should consider himself abundantly paid. His was a life of comparative ease. No drudgery; no being tied to the sound of bell or whistle; no fixed time for him to enter or leave shop or office; no time-clock for him.

And this, alas, is true; no time-clock for him; in the all-night vigil; in the agonized imploring mother's look; in the haste to another bedside of pain; in fatal hemorrhage; in serious accident; in the hope of life; in the despair of death—there is no time-clock for him. Inane and frivolous are these senseless quibbles of doctor's fees in the minds of those serious minded enough to realize that there can be no price upon life, that death is only a penalty and who in the seclusion of their inmost thoughts may regard life itself as a passing mirage, possessed only of certain physical temporal necessities that must be satisfied.

For at least forty-five years there had been no change in the doctor's fee; as far back as 1872—and farther—the fee for a house call was two dollars and an office call, one. "Good old days": carpenters could be hired for two dollars a day—ten hours; blacksmiths would shoe a horse for a dollar and a quarter; office help could be obtained for ten to fifteen dollars a week and it was a good man that could command eighteen.

With this short view in retrospection and not being altogether charmed with the "good old days," we leave history to history and face the present.

In recent years living commodities have increased in price in leaps and bounds; wages are keeping pace—has the doctor's fee increased in proportion to wages or cost of necessities? Is he forsaking his responsibilities to the community, to humanity or to his avocation for fields of greater financial attraction? And yet by education, by mental discipline and by varied capacities he is

equipped to produce equal or better financial returns for his efforts in other walks of life. Does he ask for special hours in which the day's duties may be performed, or for a shorter day? Hardly. If he has visions of ease, they end in visions, but he holds to his course. Physicians have never risen *en masse* to demand better working conditions, increased pay or shorter hours, though their hours are often long and the pay nothing. They are in a serious business because they are dealing with the only thing for which men really struggle—life and health—with rather a serious attitude of mind. Therefore, may we not be held excused if we exhibit small sympathy with any agency that tends to delay living necessities in transit or of communication that places health or life in jeopardy, unless, indeed, life and health are of lesser consequence; the disruption of any public utility is a serious matter and should require deep and serious *individual* thought inasmuch as idleness is never an economic asset and never constructively productive.

Idleness always means subsistence upon what we have or what others have, and if persisted in can only have one ending; it fills our theatres and throngs our streets with those in every appearance of plentitude who have nothing to do, in the contemplation of which we can only exclaim, even as it is written, " * * * they toil not, neither do they spin; yet Solomon in all his glory was not arrayed as one of these." Why single out the profession of medicine, therefore, as possessed of excessive desires when the members thereof are only seeking a "living wage"—whatever definition may attach to that term.

THE BUREAU OF LEGAL MEDICINE AND LEGISLATION.

It is a source of real satisfaction to learn of the creation of a Bureau of Legal Medicine and Legislation, authorized by vote of the several committees and adopted at the Saint Louis session of the House of Delegates of the American Medical Association.

Dr. William C. Woodward, as executive secretary, in his first annual report, outlined the scope, duties, etc., of this Bureau and also gave a summary of the more important subjects which have

received consideration thus far; namely, the National Prohibition Act, the Harrison Narcotic Law, the Veterans' Bureau and Chiropractic, the Sheppard-Towner Maternity Act, Medical Practice Acts, Federal income tax, animal experimentation, defense and indemnity in malpractice suits, and reorganization of federal health activities.

Certainly the above named subjects represent the most important questions confronting the physicians of America today and any earnest, concerted effort aimed at their solution, is a step in the right direction. It is too early to foresee the degree of success to be attained by this new department, but it is reasonable to hope for immeasurably greater results from the activities of a centralized body than from those of small scattered groups of men, whose efforts are unco-ordinated and whose interest is, for the most part, transient.

In matters of legislation, it would seem the logical thing for members of Congress, as well as members of state legislatures, to seek advice from this bureau when considering matters which have to do with health or with medical licensure.

Every state society should take advantage of the help that will be so freely given by this Bureau for the solution of its problems.

MEMORIES.

BY DR. J. H. AKERS.
Providence, R. I.

Chancing to meet the Editor of the RHODE ISLAND MEDICAL JOURNAL a short time ago, he made the request that I write a short article for the JOURNAL on any subject I might select other than the Volstead act, and putting the sop over by saying, "You are a man of experience, give us of it." Perhaps he feared he might run short of material to fill up space, sometime.

Sitting in my office dozing and dreaming and wondering upon what subject to write, my mind goes back thirty-eight years in the practice of medicine, doing to the best of such ability and talent as was allotted me; the curing and alleviating the sufferings of humanity. I say curing, not always so, but giving cheer and encouragement to those poor souls, nearing the border land of the unexplored world to which we must all sooner or later tread

the path of many a good friend and brother physician, for

" 'Tis but a journey,

'Tis but a step from here, and

What matters, if ships are strong and
friend be true?"

I dream of many cases, and thinking a mention of them may interest some reader, and as they come to my mind I will jot them down, not to instruct, or that they are of scientific interest, but may for the moment entertain, and cause someone to forget, while they read and smoke the good Havana, the responsibilities and worry of some troublesome case.

When starting in the practice of medicine, full of hope, but empty of pocket, I made up my mind to take anything which came to hand, and which would give me experience, if not money, and perhaps act as a stepping stone to a living practice.

Thirty-eight years ago there was not the opportunity offered the young physician to get the hospital experience as today.

I well remember my first obstetrical case. I was then in practice in a mill village in the neighboring state of Massachusetts. The patient, a good Irish woman, mother of several children. Well, I responded to the call promptly, and on arriving at the house with my kit and all the professional air I could summon, I scrubbed my hands and told the woman, a neighbor of the patient, I was ready to make an examination and asked her to make the patient ready. As she seemingly had had more experience in these cases than I, I did not give her any instructions, and I followed her into the room, and surely the patient was ready for the examination; but I did not mean an examination of the whole body, so after a little instruction, I made my examination. I thank my lucky stars that my patient was a multipara. I could make out but little of a satisfactory nature, and as she was having good and regular pains, I remarked she was doing well, and kept my courage up, and gave such encouragement to the old man as I could, and hoped the case would come out O. K.

After watching the case an hour or two I was awarded the sight of the head of the child. The perineum having been lacerated in a previous labor did not retard the babe and soon my first obstetrical case was over, with uneventful recovery. Cash in my hand—the miserable fee of five dol-

lars—and the words of the old man, "You did mighty fine, doctor," I left the house feeling I had done a good job, but of course conceding the mother had a little something to do with the successful termination of the case.

I think many times how successful is nature if not meddled with, to take care of many of the ills of the human race. I do believe we, in many cases interfere with the processes of nature, to the, perhaps, discredit of the professional reputation, and sorrow of the patient.

The second case of any importance was the case of the "black sheep" of a prominent family, who had become addicted to the drug. He surely was a "down and out," a pitiful specimen of humanity. After some weeks of treatment, cutting the dose of the drug gradually, and finally out entirely, the patient improved and am happy to say he never took up the use of the drug again and remained a useful member of the town.

Coming to Providence in 1886, have been trying to hold the health of a part of the people of the North End up to the best standard possible.

One of my first cases coming to my mind was that of a maiden lady of middle life, living with a sister in a three-room basement tenement. She had retired, but in turning in bed she rolled to the floor. With the help of a couple of neighbors, whom I got out of bed, we finally succeeded in landing her safely in bed again, and upon examination found a fractured hip. As she refused hospital treatment, I had to do the best possible and the result was very satisfactory to me, as there was only slight lameness and shortening of the leg. This case did not fill my pockets with riches, but did assist a little in my local practice.

Soon after this case, was called about midnight to go to a house to see a young man who had been in a little friendly mixup with some member of his party, and had received a knife wound of chest. The knife had punctured the chest wall; he was very pale and with every breath blood and mucous would bubble from the wound. This case I did not expect to recover, but did so, and he has been able to work steadily, from about eighteen months from date of assault, and today a fairly strong and able man.

I well remember my first case of appendicitis, which was about thirty-four years ago. A young girl about sixteen years of age, was stricken sud-

denly with fever, and pain in the right abdomen. At this date all such cases were called inflammation of bowels, etc., and we had not heard so much about them as we do today, and wonder if they were as common. I do know at this time every physician was very much interested on account of their rarity and the writing regarding them, the causes, etc. I called in consultation our good friend, the late Dr. Mitchell. He was greatly interested and later in the day had another consultation, with several other physicians present. Will say here every physician present has now passed on to the great unknown, leaving me alone for a longer existence. After we had considered the case very carefully, decided it best to operate. This I performed in the home of the girl's parents. Was most fortunate, as the abscess was nicely walled off, and case came to a successful termination. I remember the question at that time was, What was the cause of the trouble? It was considered by some that a foreign body of some sort had passed the valvular opening into the appendix. A seed of some kind or a bit of fecal matter, perhaps. I remember seeing the operation at the hospital many times later and the hunt was always on, and when such a foreign body was found it was shown up to all present.

Today they are so frequent that cases call for no particular comment.

Soon after coming to Providence, and through the influence of the friend of all young beginners in the practice of medicine—the late Dr. J. W. Mitchell—I was appointed to the Providence Lying-in Hospital, as house physician, and later as attending physician, and this practice was of great assistance in securing a considerable large obstetric practice. I wish to say here and advise any young man starting out in medical practice to take all the cases he can get, "money or no money," for these cases are surely "family getters" and if nature is as good a friend to him as it was to me in my early work, he may well be thankful. "Watchful waiting" stood me in good stead in many a case, and advise not to be too hasty to hurry the case along by operative procedure or the use of that drug which I feel too many men use and many times to their discredit as a skillful obstetrician; at least so I judge by current report.

First cases are apt to be tedious and prolonged; later cases probably will require less of your time.

Perhaps some of you have read the story lately revived and from California, and going the round, and will repeat it here. "Our good Irish friend from Southern California was visiting his married brother in New York. 'Pat,' he said, 'why don't you come out to California? With all them three children, New York is a terrible place to live in entirely.' 'Well, welcome the will o' God! It might be worse as bad as it is. It's not only three I've got but another coming, and they tell me in California every fourth child born there is a Chinaman.'" Now I have attended many a woman with the fourth child and no such experience hereabouts.

One of my earlier cases here was a young woman with spinal and pelvic deformity. Drs. Mitchell and Terry were called in consultation and it was thought best to take her to the Lying-In Hospital for a Cæsarian operation. Dr. Mitchell, chief operator. The patient made fairly good recovery from the ether and operation, but died a few days later from pneumonia. I think this was the first case of its kind at the hospital, but have not searched the records there. This operation, so often done today and with such good results that it hardly calls for comment, some women making this elective, rather than going through the pain of the natural labor.

I wish to speak here a word of how very unsatisfactory is the nurse provided by the family in many of our obstetrical cases—the untrained nurse—some mother perhaps, who, having had several children, is usually considered amply qualified to act here. Were it a surgical case or a pneumonia or severe fever she would not be considered qualified, but here the woman is just going to have a baby—no especial care is needed and anyone can feed the patient and wash and dress the baby.

Oh! if I could only instill into the minds of every expectant mother the danger which surrounds her from the ignorant attendant nurse, I would feel a duty well done.

I know how uneasy and anxious is the physician, after he has done everything possible in the way of asepsis, to have on the fifth day, perhaps, a temperature rise to one hundred or more and the fear of a case of puerperal sepsis, or septic fever. He begins to consider if he was at fault. Perhaps he is relieved, in part at least, to find that the attendant nurse is the general housekeeper, who does all

the work of the house, laundry work, scrubs the floor, etc., and then with no preparation goes to attend the needs of the patient. Here let me cite a case of my own. A young woman, primipara, on whom I was called to attend, was taken ill. On examination, after a careful scrubbing of hands, I found a mal-position, after the cervix was partially dilated, and no progress. Ether was administered, child turned and delivered with only a fair degree of difficulty. Here I had a mother-nurse, a general housekeeper and to take care of my patient. Case did well for a few days, when there began a rise of temperature to a little over a hundred and one degrees and could only make out a mild case of septic fever. Under treatment case improved but convalescence was somewhat tardy. When making my last call patient was up and around her room. About a week later was called again to see my patient. She had a chill, pain in side and considerable fever. Here I thought I had a case of septic pleurisy to deal with. After about two weeks patient was again fairly well and about the room, and partly dressed and family thought no further professional attendance necessary. Called early the next morning, in great haste by husband, who stated he thought his wife was dead. He had been occupying the room with his wife as usual, had risen to go downstairs for his breakfast. He heard a noise as if some heavy body had fallen to the floor, rushed up stairs and found his wife on the floor by the side of the bed. She had left the bed, gone across the room to the crib, taken the babe and was returning to the bed when stricken. She had sense enough to throw the infant on the bed, where found, and she had fallen to the floor, and died from an embolus. Now all this was attributable, in my mind, to the case of sepsis after labor.

Was the fault mine? Did I make a slip, or was it due to non-care of the mother-housekeeper-nurse.

I would like to say a word of advice to all young physicians attending these cases to insist and, if possible, get a good reliable nurse, one clean of person and who will not be obliged to put her hands to other work except the care of mother and babe. If she does this well she is doing all she can do, and all she should be required to do. If you cannot do this, and want to keep the case under your own care, try and get them in some hospital, and there are hospitals where this can be done.

Of course, the expense must be considered in many cases, and here you must do your best with such assistance as you or family can provide. Give the mothers the best possible chance while bringing into this world of ours the little ones, and see they have the very best care possible.

Let us go back twenty and more years and consider the general subject of medicine. Where do we see the greatest advance? Is it in the treatment of, or toward the prevention of disease? Today we hear much regarding the third or more strain, or type, in the case of pneumonia. This we did not hear of until very recent years, but outside of the serum treatment, has it helped our treatment of this disease any? I am just old enough to doubt the value and good of knowing this. I think had I this disease, I would die just as happy to know I had just the plain old lobar pneumonia, as to know I had the disease in first or fourth strain.

In general, I believe the greatest advance has been on the line of preventive medicine. Here is where the great and wonderful advance is shown of men's efforts in the conquest of the foe of mankind. Just consider the results in this line during the late war. Here our boys were all immunized against typhoid, malaria, smallpox, etc., and the results, as compared with other wars, makes a most wonderful chapter of men's conquest over disease.

It hardly can be imagined that reading such reports can but convince everybody, but I doubt not there are, or will be persons, as against the vaccination against smallpox, who will rise up against this mode of fighting disease. There are still great tasks yet ahead for our sanitarians, but who after what we have seen can doubt the ultimate results? I read recently an article of W. J. Showather regarding the malarial investigation, how the germ was discovered and so interesting was it I am going to quote a little of it. Perhaps by doing so I may invite the use of the editorial blue pencil—but I take the chance.

"It was Major Ronald Ross, a British army surgeon, who finally was able to pin the crime of spreading malaria on the Anapheline mosquito. Laveran found the tiny ell like parasite, which, swimming through the blood, attacks and breaks up the red corpuscles and causes malaria. Then Ross took up the task to find how it got there. He began to dissect the mosquito under a strong microscope. After weeks of searching, was unable

to find the malarial germ in the insect's tissues, but coming to the stomach, there he found black specks. He recognized them as the pigment of the malarial germ. On further examination he found the contents of these pigment cells to contain a multitude of thread-like bodies, and when the ruptured were poured into the body of the insect, then entering into the salivary glands and from there reached the blood of the person bitten." In his story of his work Ross exclaims: "Never in our dreams had we imagined so wonderful a tale as this."

We know the results of General William C. Gorgas in his fight to stamp out the yellow fever scourge at Havana and Panama. What more wonderful reading of the results of man's efforts in the line of preventive medicine and disease?

Now, Mr. Editor, I have wandered in my dreamings, and as I stated earlier, should not put forward anything except, perhaps, of an entertaining nature and so will end by giving you the story of the good western cowboy who sometime had heard a doctor speak of a counter irritant, and asked him what it was, he answered, "Charlie, it's something as hurts a whole lot worse than what's the matter with you, but it ain't anything like so dangerous."

Perhaps the readers of the JOURNAL will find this scribbling of mine a bit different from the countri-irritant we sometimes prescribe in our practice, and hope, not of a dangerous character.

CASE REPORTS

RUPTURE OF THE UTERUS.

By F. J. KING.

The following report is of a case occurring at the Providence Lying-in Hospital:

Patient was admitted at 6:45 A. M., with a history of having been awakened suddenly about three o'clock by a sharp, lancinating pain in the upper left quadrant of the abdomen, so severe as to render moving impossible.

History of a Caesarian operation following convulsions of a previous birth: She had been for four months attending the O. P. D. pre-natal clinic during the present pregnancy, and had been

warned to enter the hospital as soon as she felt her first pain. At the time of her admission, the contour of the uterus was plainly visible, and was tightly drawn over the foetus, which seemed close to the surface of the abdomen.

Pulse 76, temperature 98.2°, resp. 22. Rectal examination showed that the cervix was not "taken up," and the external os was dilated sufficiently to admit the examining finger.

Patient was very tender over region of the uterus, was apprehensive and nervous. Fetal heart 120, but irregular; two hours later could not be detected. Bleeding from the vagina was reported, and immediate operation was decided upon, diagnosis of rupture of the uterus having been established.

There was no sign of any extensive hemorrhage and no complaint of weakness or faintness.

A Caesarian was performed, and the membranes were found beneath the peritoneum, protruding from the rupture; these were ruptured and a dead foetus with placenta delivered.

Pituitrin and Ergonne were administered followed by good contraction. Hysterectomy was decided upon, however, which was done with removal of the drain upon the fifth day.

Recovery was uneventful; the patient sat up on the fourteenth day, and returned home upon the seventeenth.

This case is somewhat noteworthy, because, although only two weeks from term, the patient had experienced no labor pains.

TRANSFUSION

In view of the recent reports with reference to the intraperitoneal transfusion of citrated blood, it was decided to try this method in a suitable case. The case that is being reported was admitted in extremis and a positive diagnosis of miliary tuberculosis was made before the transfusion. This route was entirely optional and was chosen merely to demonstrate to our own satisfaction that citrated blood is absorbed from the abdominal cavity, as stated.

Case: Ernest W., age 5 months, admitted to the Providence City Hospital Feb. 8, 1923. Diagnosis on admission was: Convalescent measles, acute mastoiditis and diphtheria carrier. F. H. Mother

died of tuberculosis and the father has active tuberculosis. P. H. Pt. was a full term baby, delivered normally and weighed 7 pounds at birth. Had always been well until the beginning of the present illness. P. I. Began two weeks before admission when a diagnosis of measles was made. Since that time he has been having a daily temperature and has coughed a great deal and has taken his food very poorly.

P. E. on admission: Temp. 102.4, pulse 140, respiration 40, weight 8 pounds. Pt. is a poorly developed, undernourished, acutely ill infant. Head normal, except for local. Eyes normal. Ears; the left ear canal was full of foul pus. There was considerable swelling and redness behind the ear, and this was definitely tender on manipulation. Nose, mouth, throat and pharynx were normal. Heart normal in size, action and sounds. Lungs, many medium moist rales widely and even strongly positive after 48 hours. Patient continually distributed throughout both lungs. No areas of dullness or bronchial breathing. Abdomen normal. Skin covered with the pigmentation of a profuse rash as is seen after measles. Otherwise normal.

White blood count 21,000, blood culture sterile after 48 hours' incubation. Von Pirquet very ued to be feverish and very sick until the 27th of February, when the temperature came to normal for the first time since admission. At this time the red count was 3,600,000 and the hemoglobin (Sahli) was 40%.

Feb. 28, 1923, Pt. was given 50 cc. of citrated blood (0.25% sol.) properly matched, the transfusion. The temperature remained at 98.8 and there was no abdominal distension, hematuria or vomiting. For the next four days counts were made daily and they averaged about 4,500,000 for the red cells and the hemoglobin went up to 58%.

March 8, 1923. Mastoid was operated on and after this the child did very well for about four weeks and gained two pounds.

April 8, 1923. For the past few days the Pt. has been coughing a great deal and he is not taking food well. X-ray examination of the chest shows a widespread tuberculous process. Sputum and feces are heavily positive for tubercle bacilli.

May 4, 1923. Pt. died after a rapid loss of weight.

Necropsy report: necropsy performed 6 hours

post-mortem. Head normal except for the scar of the mastoid operation. Eyes, ears, nose and mouth normal. Heart normal. Pericardium normal. Lungs: right pleural cavity normal. Lower half of the left pleural cavity is obliterated by dense adhesions between the visceral and parietal pleura and between the visceral pleura and the diaphragm. Tricho-bronchial glands are markedly enlarged and are typically tuberculous. Both lungs contain many tubercles and the lower lobe on the left side is practically solid and contains an abscess about 2.5 cms. in diameter.

Abdominal cavity: No free fluid. Peritoneum is clean and glistening. No evidence of any inflammation at the site of abdominal puncture. No adhesions, ecchymoses or blood clots in the abdominal cavity. Liver and spleen contained many tubercles. Mesenteric glands only slightly enlarged. Otherwise normal.

Comment: This case is being reported primarily because it bears out the assertion of Siperstein* that citrated blood is readily absorbed from the abdominal cavity. Although this is certainly true, we cannot conceive of any emergency where the intraperitoneal route would have any superiority over the usual routes.

This case is also of interest because of the fact that it shows that the primary lesion in pulmonary tuberculosis in infants is often in the lower lobes and that cavitation occurs just as it does in adults.

M. ADELMAN, M.D.

R. C. BATES, M.D.

Providence City Hospital

*Intraperitoneal transfusion with citrated blood. Siperstein. *Am. Journ. Dis. Children*, Vol. 25, No. 2; *Am. Journ. Dis. Children*, Vol. 25, No. 3.

SOCIETIES

WASHINGTON COUNTY MEDICAL SOCIETY.

The quarterly meeting of the Washington County Medical Society was held at the Atlantic House, Narragansett Pier, Thursday morning, July 12, 1923, at 11 o'clock.

Paper: "Relation of the Natural History of Certain Diseases to Public Health Administration," Dr. W. T. Howard.

W. A. HILLARD, M. D., *Secretary*.